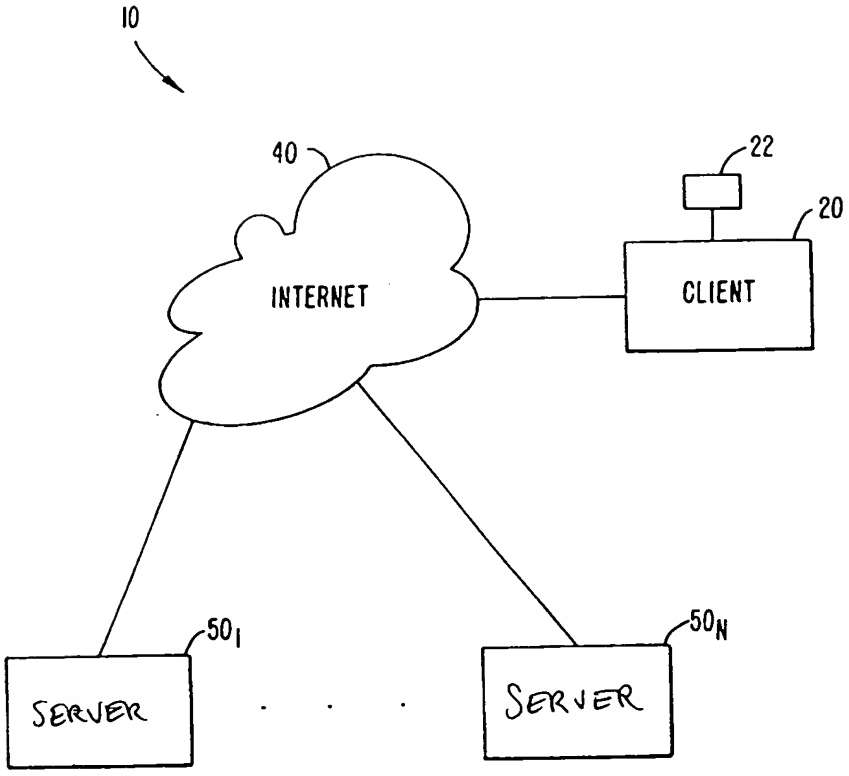

FIG. 1.

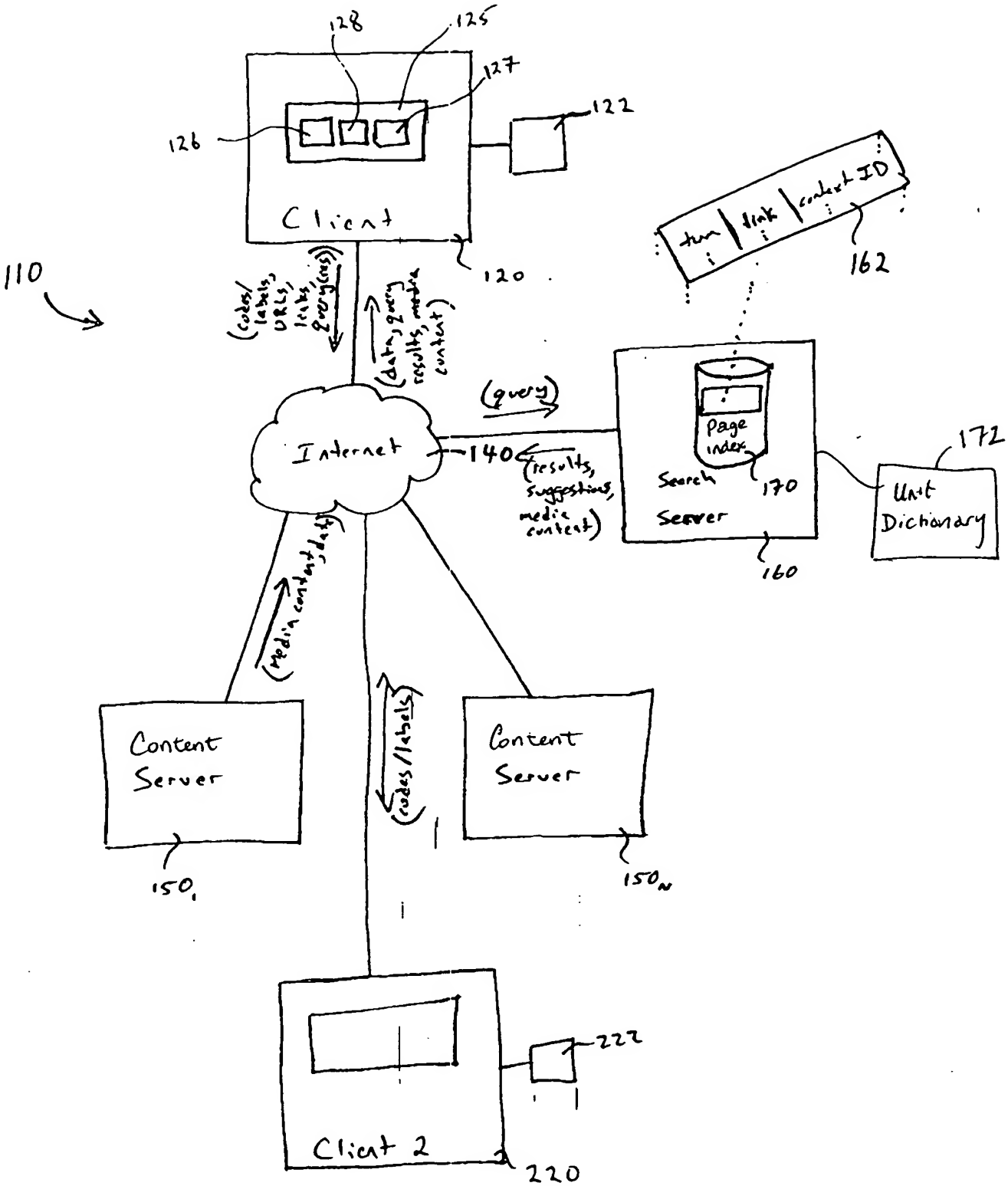
110
128
125
127
126
122
Client
120
(codes/labels, URLs, links, query(ies))
(data, query results, media content)
term | link | content ID
162
(query)
Internet
140
(results, suggestions, media content)
Page index
Search Server
170
160
172
Unit Dictionary
(media content, data)
(codes/labels)
Content Server
150₁
Content Server
150N
222
Client 2
220

Figure 2

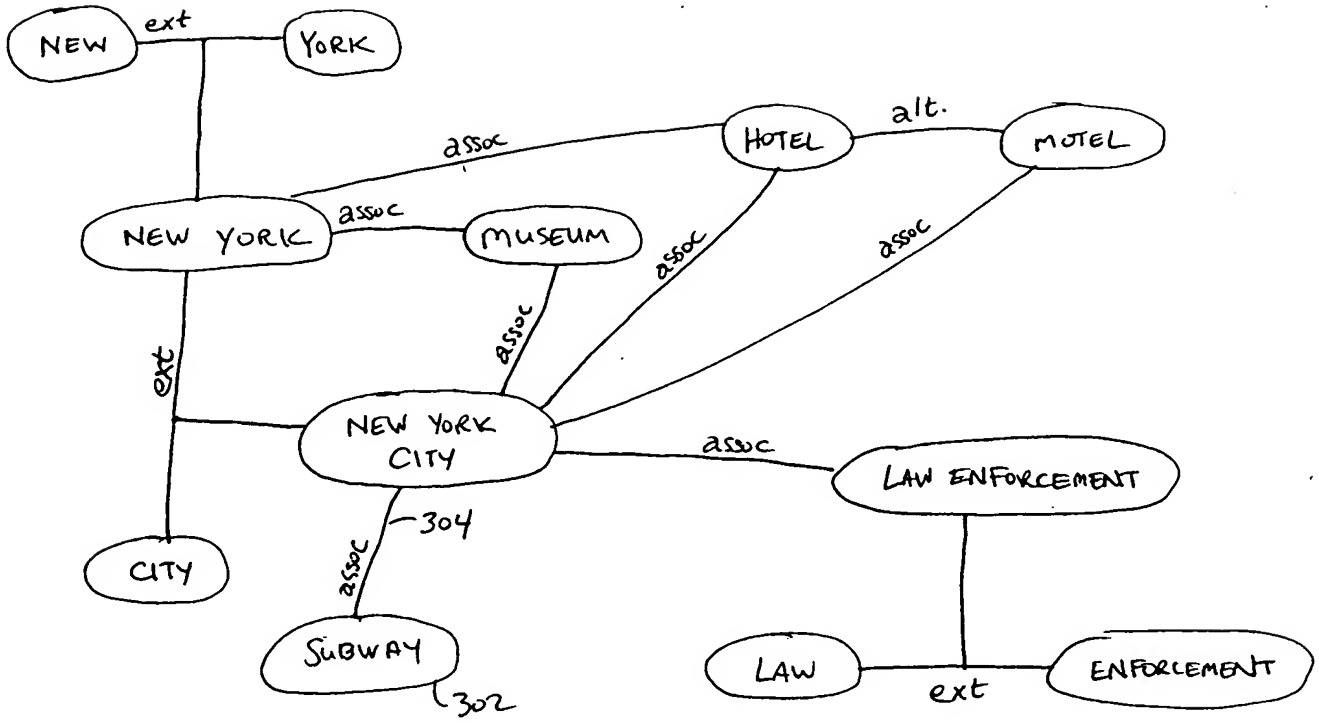
NEW
ext
YORK
HOTEL
alt.
MOTEL
assoc
NEW YORK
assoc
MUSEUM
assoc
assoc
ext
assoc
NEW YORK CITY
assoc
LAW ENFORCEMENT
304
CITY
assoc
SUBWAY
302
LAW
ENFORCEMENT
ext

FIG. 3

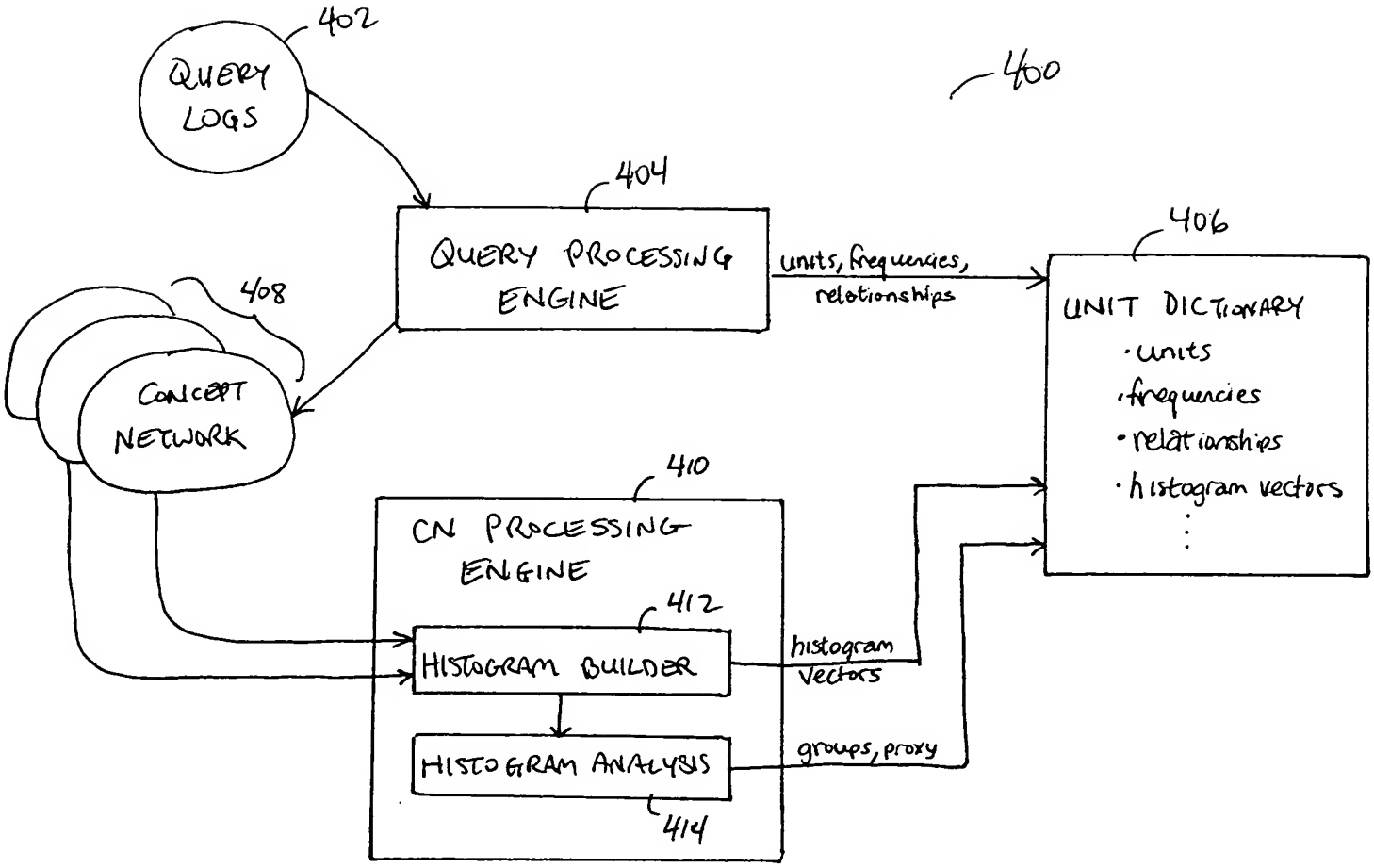
400
402
QUERY LOGS
404
QUERY PROCESSING ENGINE
units, frequencies, relationships
406
UNIT DICTIONARY
· units
· frequencies
· relationships
· histogram vectors
408
CONCEPT NETWORK
410
CN PROCESSING ENGINE
412
HISTOGRAM BUILDER
histogram vectors
HISTOGRAM ANALYSIS
groups, proxy
414

FIG. 4

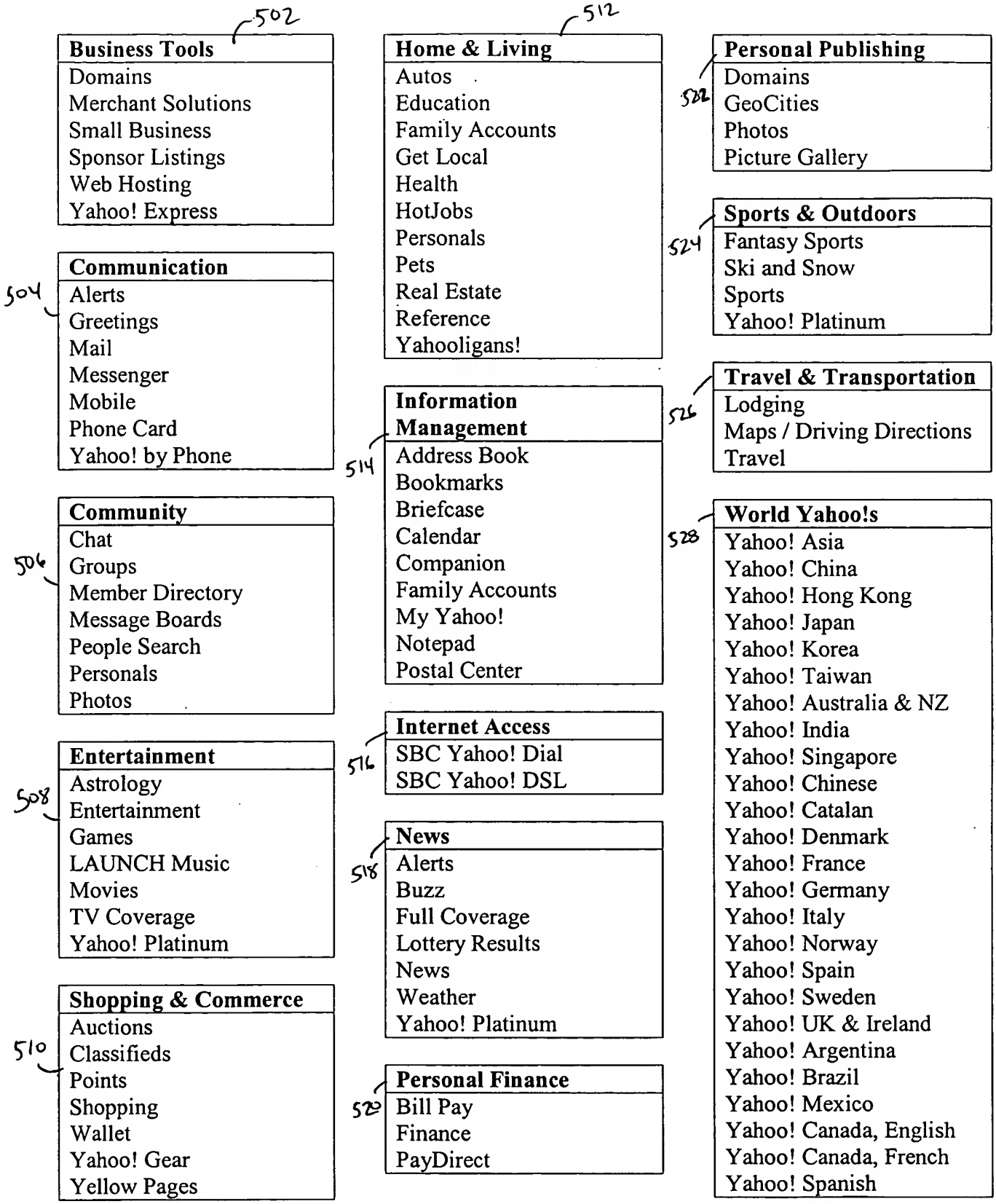
502
Business Tools
Domains
Merchant Solutions
Small Business
Sponsor Listings
Web Hosting
Yahoo! Express
504
Communication
Alerts
Greetings
Mail
Messenger
Mobile
Phone Card
Yahoo! by Phone
506
Community
Chat
Groups
Member Directory
Message Boards
People Search
Personals
Photos
508
Entertainment
Astrology
Entertainment
Games
LAUNCH Music
Movies
TV Coverage
Yahoo! Platinum
510
Shopping & Commerce
Auctions
Classifieds
Points
Shopping
Wallet
Yahoo! Gear
Yellow Pages
512
Home & Living
Autos
Education
Family Accounts
Get Local
Health
HotJobs
Personals
Pets
Real Estate
Reference
Yahooligans!
514
Information Management
Address Book
Bookmarks
Briefcase
Calendar
Companion
Family Accounts
My Yahoo!
Notepad
Postal Center
516
Internet Access
SBC Yahoo! Dial
SBC Yahoo! DSL
518
News
Alerts
Buzz
Full Coverage
Lottery Results
News
Weather
Yahoo! Platinum
520
Personal Finance
Bill Pay
Finance
PayDirect
522
Personal Publishing
Domains
GeoCities
Photos
Picture Gallery
524
Sports & Outdoors
Fantasy Sports
Ski and Snow
Sports
Yahoo! Platinum
526
Travel & Transportation
Lodging
Maps / Driving Directions
Travel
528
World Yahoo!s
Yahoo! Asia
Yahoo! China
Yahoo! Hong Kong
Yahoo! Japan
Yahoo! Korea
Yahoo! Taiwan
Yahoo! Australia & NZ
Yahoo! India
Yahoo! Singapore
Yahoo! Chinese
Yahoo! Catalan
Yahoo! Denmark
Yahoo! France
Yahoo! Germany
Yahoo! Italy
Yahoo! Norway
Yahoo! Spain
Yahoo! Sweden
Yahoo! UK & Ireland
Yahoo! Argentina
Yahoo! Brazil
Yahoo! Mexico
Yahoo! Canada, English
Yahoo! Canada, French
Yahoo! Spanish

FIG. 5

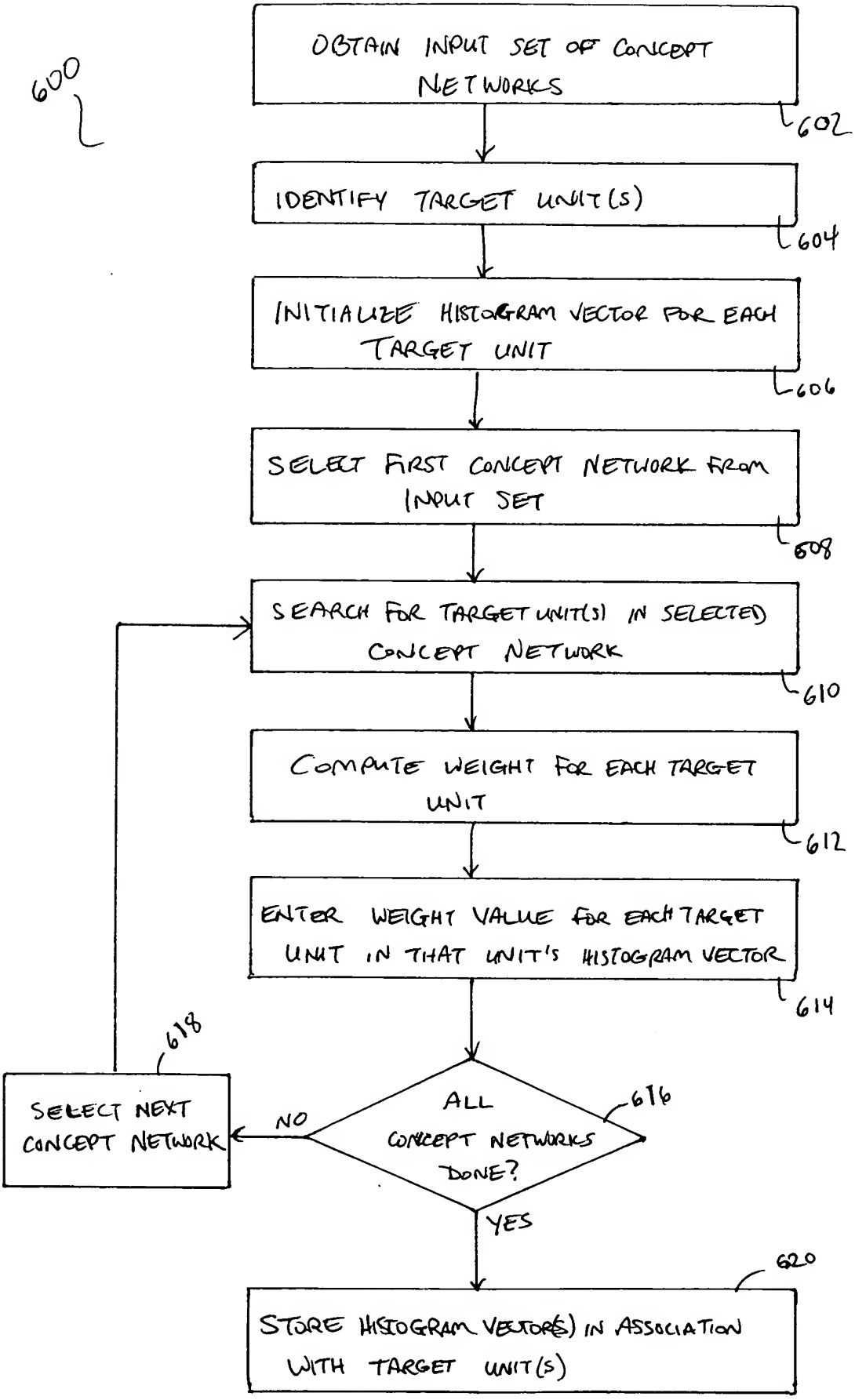
600
OBTAIN INPUT SET OF CONCEPT NETWORKS
602
IDENTIFY TARGET UNIT(S)
604
INITIALIZE HISTOGRAM VECTOR FOR EACH TARGET UNIT
606
SELECT FIRST CONCEPT NETWORK FROM INPUT SET
608
SEARCH FOR TARGET UNIT(S) IN SELECTED CONCEPT NETWORK
610
COMPUTE WEIGHT FOR EACH TARGET UNIT
612
ENTER WEIGHT VALUE FOR EACH TARGET UNIT IN THAT UNIT'S HISTOGRAM VECTOR
614
ALL CONCEPT NETWORKS DONE?
616
NO
YES
SELECT NEXT CONCEPT NETWORK
618
STORE HISTOGRAM VECTOR(S) IN ASSOCIATION WITH TARGET UNIT(S)
620

FIG. 6

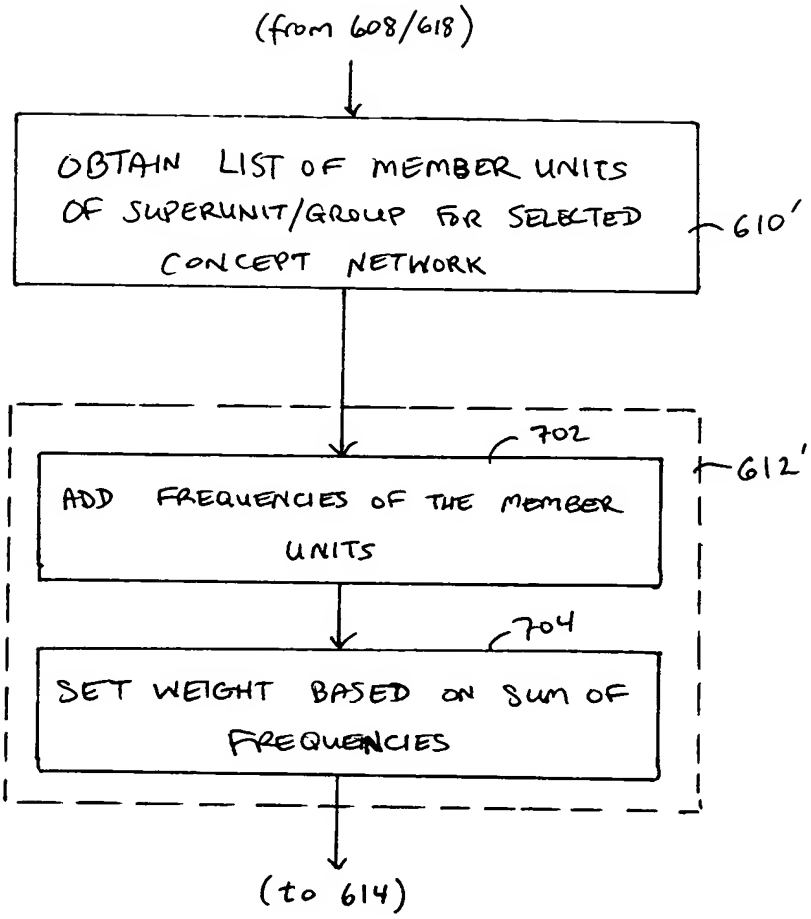
(from 608/618)
OBTAIN LIST OF MEMBER UNITS OF SUPERUNIT/GROUP FOR SELECTED CONCEPT NETWORK
610'
612'
702
ADD FREQUENCIES OF THE MEMBER UNITS
704
SET WEIGHT BASED ON SUM OF FREQUENCIES
(to 614)

FIG. 7

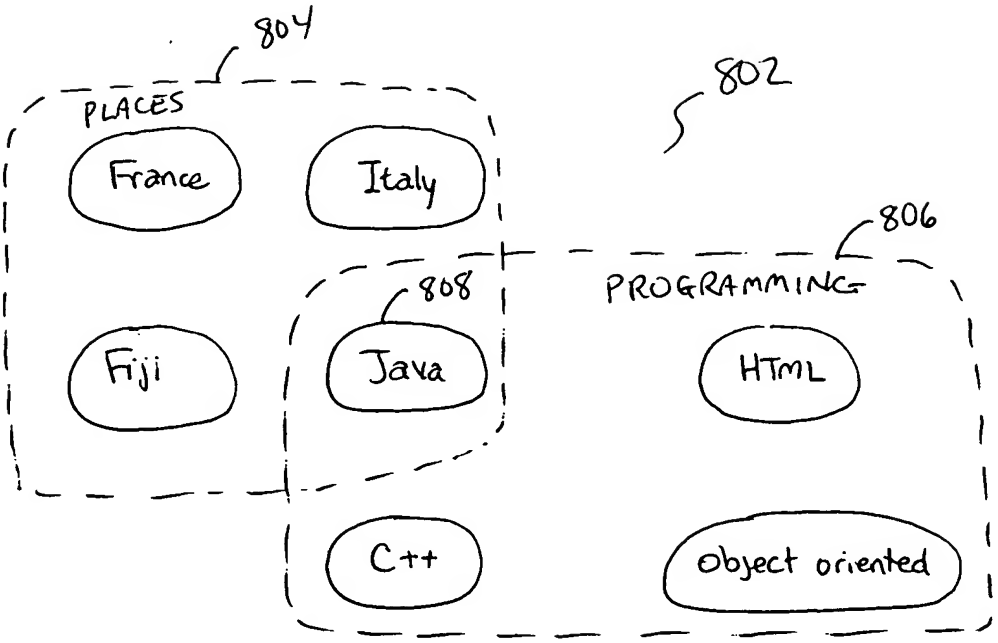
804
PLACES
France
Italy
Fiji
802
806
PROGRAMMING
808
Java
HTML
C++
object oriented

FIG. 8A

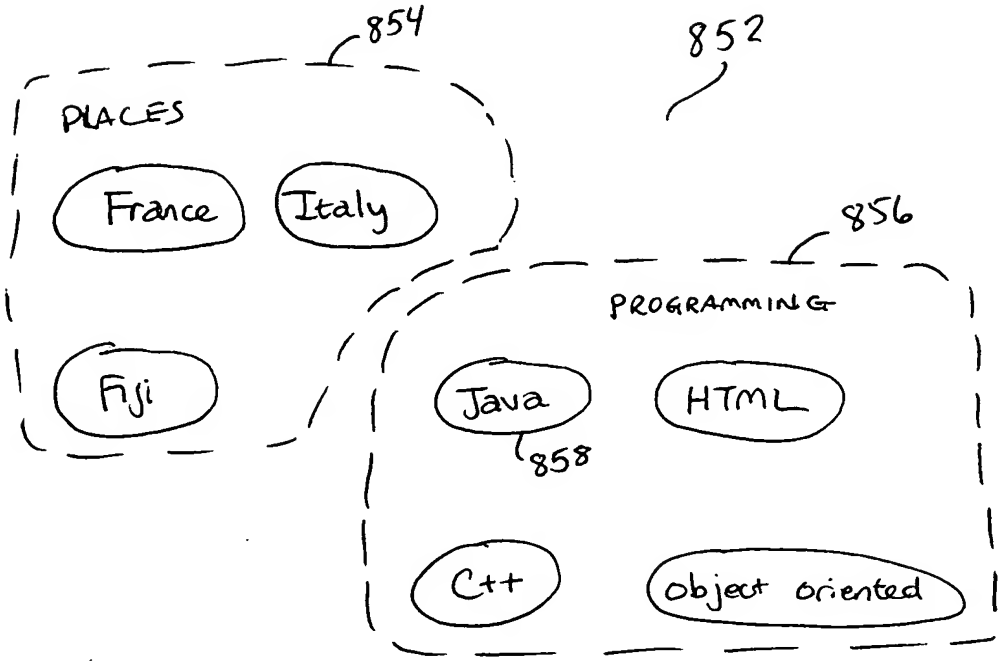
854
PLACES
France
Italy
Fiji
852
856
PROGRAMMING
Java
858
HTML
C++
object oriented

FIG. 8B

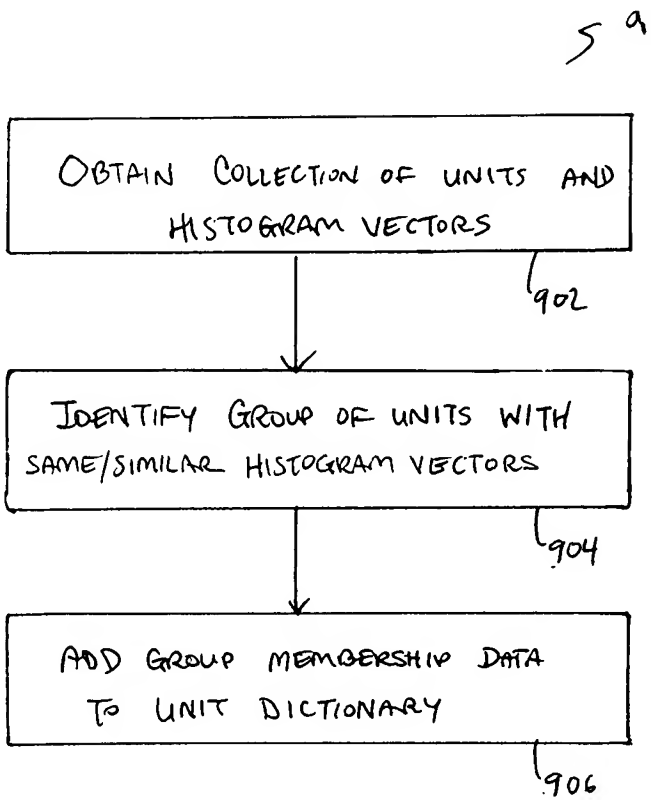
900
OBTAIN COLLECTION OF UNITS AND HISTOGRAM VECTORS
902
IDENTIFY GROUP OF UNITS WITH SAME/SIMILAR HISTOGRAM VECTORS
904
ADD GROUP MEMBERSHIP DATA TO UNIT DICTIONARY
906

FIG. 9

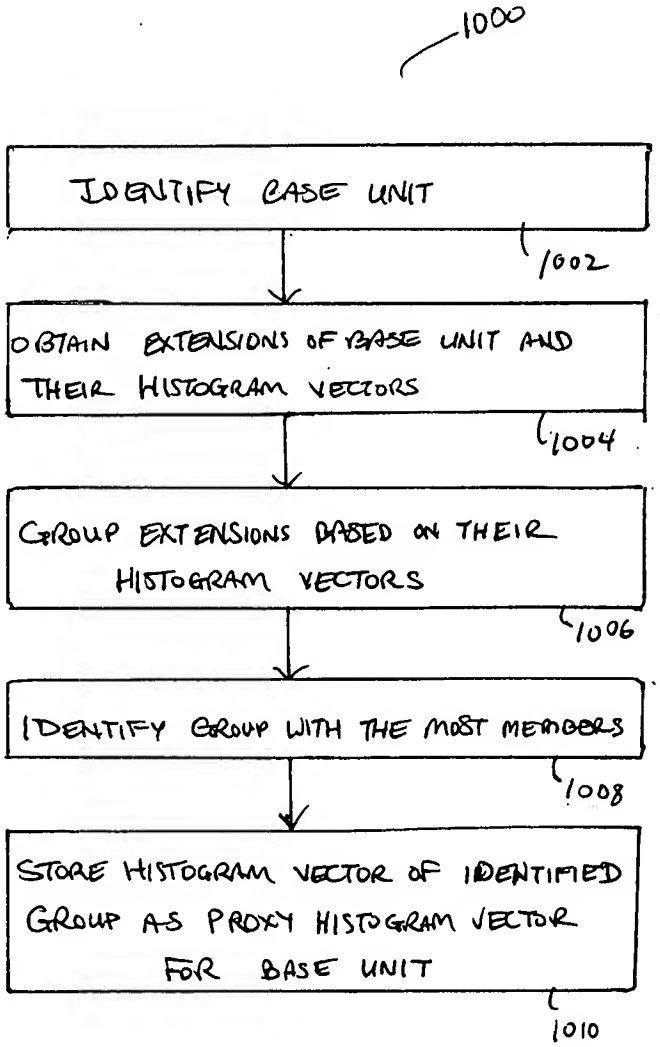
1000
IDENTIFY CASE UNIT
1002
OBTAIN EXTENSIONS OF BASE UNIT AND THEIR HISTOGRAM VECTORS
1004
GROUP EXTENSIONS BASED ON THEIR HISTOGRAM VECTORS
1006
IDENTIFY GROUP WITH THE MOST MEMBERS
1008
STORE HISTOGRAM VECTOR OF IDENTIFIED GROUP AS PROXY HISTOGRAM VECTOR FOR BASE UNIT
1010

FIG. 10

UNIT	HISTOGRAM VECTOR									DECIMAL
Halloween	1	1	1	1	1	1	1	1	1	511
Halloween party	0	0	1	1	1	0	0	0	0	112
Halloween candy	0	0	0	1	1	1	0	0	0	56
Haloween costume	0	0	1	1	1	0	0	0	0	112
⋮				⋮						
Halloween Michael Myers	1	1	1	1	1	1	1	0	0	508
⋮				⋮						

FIG. 11A

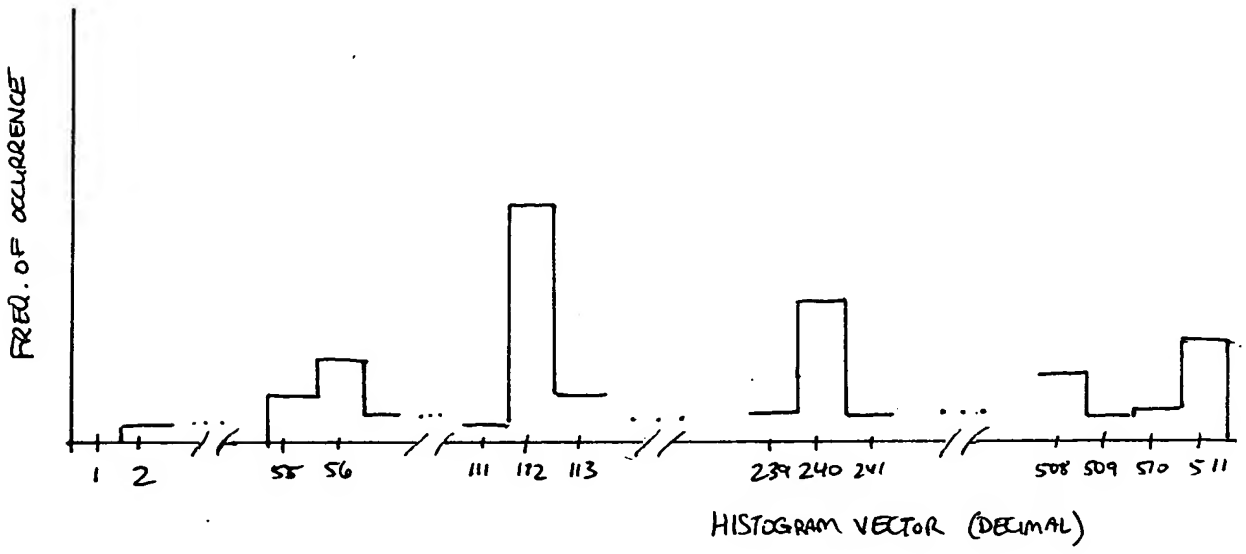

FIG. 11B

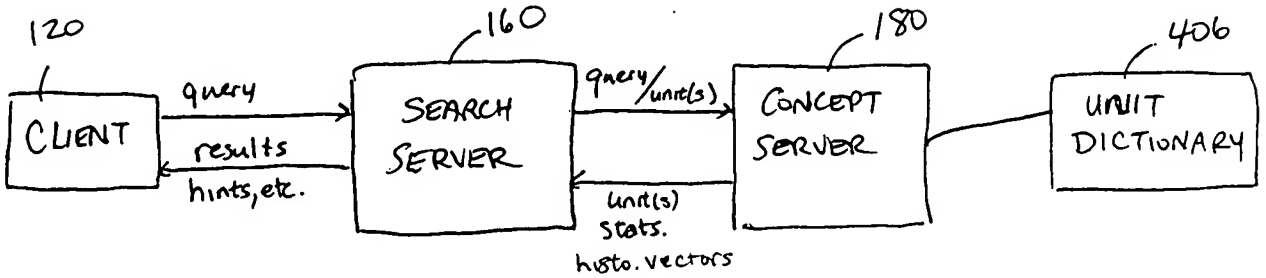
120
160
180
406
CLIENT
query
results
hints, etc.
SEARCH SERVER
query/unit(s)
unit(s)
stats.
histo. vectors
CONCEPT SERVER
UNIT DICTIONARY

FIG. 12